Learners' Agency, Beliefs, Mindsets and Teacher Autonomy as Predictors of Willingness to Communicate in Online Learning

Suci Nugrah Amalia
Universitas Negeri Malang, Indonesia
<suci.nugrahamalia@gmail.com>

Radina Anggun Nurisma
Politeknik Elektronika Negeri Surabaya, Indonesia
<radinaanggun@gmail.com>

Utami Widiati
Universitas Negeri Malang, Indonesia
<utami.widiati.fs@um.ac.id>

Lastika Ary Prihandoko
Universitas Sebelas Maret, Indonesia
<prihandoko@staff.uns.ac.id>

Abstract

English-as-a-foreign-language (EFL) students' willingness to communicate (WTC) is required both in face-to-face (F2F) and online learning. While literature had extensively explored students' WTC factors in F2F learning, studies on students' WTC factors in online learning were still limited. Hence, this exploratory factor analysis (EFA) study aimed at investigating the interplays among learner agency, learner beliefs, growth language mindset, and teacher autonomy support as predictors of students' WTC in online learning by testing eight formulated hypotheses about the possible interplays. Using Partial Least Square-Structural Equation Modeling (PLS-SEM), we carried out the study with 367 EFL students from several universities in Indonesia who had experienced online English classes and invited them to voluntarily respond to an online survey questionnaire using a Google form. The results demonstrated positive and significant relationships among the variables, indicating that learner agency, learner beliefs, growth language mindset, and teacher autonomy support are significant predictors of WTC in online learning. EFL teachers might use the results of this study as a consideration to proactively encourage students' WTC in online learning. Future research directions and other pedagogical implications are also discussed.

Keywords: Learner agency, learner beliefs, growth language mindset, teacher autonomy support, WTC in online learning, EFL students' WTC

In the EFL context, willingness to communicate (WTC) is viewed through the lens of the L2 WTC theory, which defines it as students' readiness to actively engage in an ongoing discourse at a specific time using the L2, in this respect, EFL (Zhou et al., 2020). WTC is regarded as a

crucial component in the development of language learners' communicative competence and as an essential part of the language learning and communication processes. The higher the EFL students' level of L2 WTC is, the more likely it is that they will communicate in English. On the contrary, when their willingness to speak in English decreases, so does their engagement in English communication (Al-murtadha & Feryok, 2017).

A plethora of studies in the past two decades have examined the factors of students' WTC, both individual and contextual factors. Among the factors, motivation, communication confidence, affective variables, metacognition, interlocutor, topic, task orientation, and classroom interactional pattern are found to contribute to L2 WTC (Alimorad & Farahmand, 2021; Balouchi et al., 2021; Khajavy et al., 2016; Lee & Hsieh, 2019; Peng & Woodrow, 2010; Ruane, 2020; Sato & Dussuel Lam, 2021; Waluyo & Bakoko, 2022; Yashima, 2002; Zarrinabadi et al., 2021). The aforementioned studies have been beneficial to us. They are significantly crucial for EFL teachers to be informed about the factors that influence students' WTC. Having a greater understanding of these factors will help EFL teachers and lecturers promote their students' WTC in a more proactive way. In the meantime, with the growth of technology and its enhanced affordance, which enables young people to increasingly use digital communication in daily life, there is a need to explore WTC factors not only in face-to-face (F2F) learning but also in online learning (Kruk, 2019). In addition, researchers have highlighted the importance of promoting students' WTC in not only F2F classrooms but also in online classes (Ebadi & Ebadijalal, 2020; Reinders & Wattana, 2014).

Similar to F2F learning, the success of English communication in online learning also calls for the individual factors of students' WTC such as learner agency, learner beliefs, and growth language mindset, as well as the contextual factors such as teacher autonomy support (Gao, 2010; Larsen-Freeman et al., 2021; Lou & Noels, 2020; Peng & Woodrow, 2010; Zarrinabadi et al., 2021). Learner agency is described as the learners' sense of ownership and control over their own learning. Such learners believe that they have the ability to grow and develop and are in control of their learning. Learners who are agentive are expected to have a growth mindset (Larsen-Freeman et al., 2021). Next, learner beliefs refer to learners' value judgments about learning English; what types of learning and communication behaviors are acceptable in an English classroom impacts classroom communication habits (Peng & Woodrow, 2010). Previous studies indicated that learner beliefs have a relation with learner agency (Gao, 2010). However, research exploring their influence on students' WTC is limited. Then, growth language mindset might develop their ability to learn languages through effort (Lou & Noels, 2017). Although studies have demonstrated that language mindsets can be altered, little research has studied the contextual factors of language mindsets (Lou & Noels, 2020). Additionally, teacher autonomy support refers to teachers' regard for students' sentiments, provision of relevant information and opportunity for choice, and minimization of demands and pressures (Deci & Ryan, 2013). A study conducted by Zarrinabadi et al. (2021) portrayed that increasing teachers' autonomy support in one's communicative competence is thus regarded as an important effort to promote students' WTC. Khalilzadeh and Khodi (2021) in their study have also highlighted that teachers' personality, competence, and teaching method influence EFL students' motivation, an attribute that has been widely known as a strong predictor of students' L2 WTC.

In the Indonesian context, previous research on EFL students' WTC indicated that the level of WTC still varies among students. Some students with a higher level of WTC could engage

actively and take advantage of opportunities to communicate using English, while others with a lower level of WTC remain silent (Amalia et al., 2019; Havwini, 2019; Said et al., 2021). Those findings imply a substantial need for research into the factors that correlate with and may serve as direct predictors of students' WTC. However, the majority of the research studies on Indonesian students' WTC are conducted in a traditional classroom setting, while research investigating the individual and contextual factors of students' WTC in online learning is still limited (Mulyono & Saskia, 2021). In fact, similar to a conventional F2F classroom, students' WTC in an online classroom is highly influenced by a number of factors (Derakhshan et al., 2021; Tutyandari et al., 2022). The scarcity of empirical evidence on online setting may result in English teachers and lecturers not having as much information about language learners' L2 WTC as that in F2F classes (Elahi et al., 2019). As a result, EFL teachers, especially the ones in the Indonesian context, may find difficulties promoting students to the highest level possible of WTC due to their being uninformed of the factors affecting students' WTC in online classes.

Moreover, the review of previous studies shows that researchers pay less attention to the interrelated factors among learner agency, learner beliefs, growth language mindset, teacher autonomy support, and students' WTC in online learning, specifically viewed from a quantitative study's perspective using exploratory factor analysis. Hence, the present study aims to explore how learner agency, learner beliefs, growth language mindset, and teacher autonomy support interplay in promoting students' WTC in online learning in the context of tertiary students from Indonesia. Based on the research background, this study tries to address the following research question: What are the interrelationships among learner agency, learner beliefs, growth language mindset, teacher autonomy support and students' WTC in online learning?

Literature Review

The following presents the theoretical reviews connected to the variables in the current study. The variables are described to develop the hypotheses in an attempt to find answers to the research question. They include learner agency, learner beliefs, growth language mindset, teacher autonomy support and students' WTC in online learning.

Learner Agency

Agency is typically understood as people's willingness and ability to take action (Gao, 2010). A previous study found that agency has a positive correlation with students' capacity for autonomous learning (Bown, 2009). It implies that students need to be aware of their own agency and confident in their ability to use it to achieve learning success. Another study on learner agency demonstrates that agency significantly affects learners' self-efficacy, identity, motivation, and metacognition, four critical variables that determine the success of language learning, especially in the setting of distance education (Xiao, 2014). Although previous research has extensively studied the role of learner agency in maximizing learner potential (Larsen-Freeman et al., 2021), no research has examined its influence on students' WTC, especially in online learning. Hence, the present study explores learner agency as a possible factor contributing to students' WTC in online learning since WTC requires students' willingness to take action in terms of communication in the given time.

Learner Beliefs

Belief is defined as "concepts, ideas, and opinions" that are socially and discursively produced by the learners about language learning (Kalaja et al., 2017). Learner beliefs, according to Peng and Woodrow (2010), are students' opinions about the value of learning English and proper classroom communication behavior that will have a direct impact on such behaviors. Hence, learner belief in English communication could be an influential factor in students' WTC. Previous SLA research also suggests that belief has a relationship with agency; agency shapes and is shaped by beliefs (Gao, 2010). Moreover, learner beliefs are also found to have significant effects on motivation and communication confidence (Jackson, 2002; Peng & Woodrow, 2010), which are known as predictors of L2 WTC. Based on the aforementioned relationships, this study examines the relationship between learner beliefs and students' WTC in online learning.

Growth Language Mindset

Language mindset is described as beliefs that people have regarding whether their capacity to acquire a language is fixed or developable (Lou & Noels, 2017). Growth language mindsets were discovered to influence the EFL learners' classroom mastery goals and language anxiety while communicating with native speakers (Lou & Noels, 2019). An experimental study found that when teachers encourage students to create learning goals and assist them in developing their abilities, growth mindsets are more likely to emerge in students (Rattan et al., 2012). Therefore, it is possible that students would adopt growth mindsets if they felt that the classroom environment was more supportive (Lou & Noels, 2020). While research in language learning has proven that language mindsets could be modified (Lou & Noels, 2016), the antecedents of language mindsets in the online learning environment have not been thoroughly studied. As such, one of the current study's objectives is to perform a comprehensive assessment of the influential factors of growth language mindset.

Teacher Autonomy Support

Autonomy support is the condition in which a person in a position of authority considers the perspective of others, respects their feelings, and provides them with relevant information and opportunities for choice while decreasing the use of demands and pressures (Deci & Ryan, 2013). A teacher who values autonomy-supportive pedagogy may give information for learning while allowing students to utilize this information in their own ways. In contrast, a controlling authority might use punishment or coercive measures to compel students to conform to specific ways (Black & Deci, 2000). Students who viewed their teachers to be more autonomy-supportive were more likely to adopt a growth-oriented (rather than a fixed) language mindset, feeling more competent and driven to initiate English communication in the classroom (Ardi et al., 2023; Zarrinabadi et al., 2021). This study then tries to explore the role of teacher autonomy support to build learner agency, growth language mindset, and learner belief to enhance students' WTC.

Willingness to Communicate in Online Learning (WTCOL)

It is a truism that the target of EFL learning is to increase students' EFL communicative competence. As regards, communication takes place if EFL students have an adequate degree of L2 WTC because L2 WTC is the aspect that moderates students' communicative behavior (Zhou et al., 2020), and it determines students' L2 competence (Al-murtadha, 2020). A study

by Kruk (2019) suggested that EFL students' L2 WTC contributes to their success in learning. The literature on WTC has explored a number of influential factors of one's WTC. Among the factors are the perceived communicative competence and a lack of anxiety (Elahi et al., 2016; Zarrinabadi et al., 2021), self-confidence (Lin, 2019; Yashima, 2002), motivation (Ghonsooly et al., 2012; Lee & Lee, 2020), classroom environment (Peng & Woodrow, 2010), attitudes (Khajavy et al., 2016), affective variables (Lee & Hsieh, 2019; Waluyo & Bakoko, 2022), international posture (Balouchi et al., 2021), metacognition (Sato & Lam, 2021), and growth language mindset (Zarrinabadi et al., 2021). Those studies have revealed that WTC is affected by both individual and contextual factors, which could vary from student to student. The aforementioned studies have provided useful information for EFL teachers to take the influential factors into account in their efforts to promote students' WTC. However, to the best of our knowledge, studies on factors that influence students' WTC in online learning are still limited. Therefore, the present study examines the interplays among individual and contextual factors namely learner agency, learner beliefs, growth language mindset, and teacher autonomy support in promoting students' WTC in online learning.

The Proposed Theoretical Interrelationships among Learner Agency, Learner Beliefs, Growth Language Mindset, and Teacher Autonomy Support

Several studies in different areas of WTC have explained the interrelationships among learner agency, learner beliefs, growth language mindset, and teacher autonomy support separately in different studies and contexts. According to a study conducted by Larsen-Freeman et al. (2021), learners who are agentive have a growth mindset. They feel they are in charge of their own learning and have the capacity to grow and develop. Learners' positive beliefs will enable the enhancement of other variables that promote students' WTC. Peng and Woodrow (2010) demonstrated the direct effect of learner beliefs on motivation and communication confidence which becomes the predictors of students' WTC. In addition, previous SLA research suggests that beliefs are closely connected to the agency; learner agency influences and is influenced by beliefs (Gao, 2010). Subsequently, a study conducted by Lou and Noels (2020) suggested that in addition to learner agency, teacher autonomy support is proven to have a strong potential to develop students' growth mindsets. It is possible that students who regarded their teachers to be more autonomy-supportive were more likely to embrace growing (as opposed to fixed) language mindsets, feeling more competent and motivated to utilize English in the classroom (Zarrinabadi et al., 2021). Thus, teachers also play a crucial role in fostering learner agency by providing students with opportunities to exercise and strengthen their agency (Larsen-Freeman et al., 2021). The development of learner agency is essential since the agency significantly affects learners' self-efficacy, identity, motivation, and metacognition, comprising the four important dimensions to determine language learning success, particularly in the context of online learning (Xiao, 2014). Students who acquire agency are better prepared not simply for success as language learners, but also for the difficulties and possibilities that await them outside of the classroom, now and in the future.

The proposed theoretical interplays among learner agency, learner beliefs, growth language mindset, and teacher autonomy support allow us to generate hypotheses to investigate the interrelationships of these variables within the framework of the study's context, namely students' WTC in online learning. So far, prior studies have not yet examined the full interrelationships between the variables of learner agency, learner beliefs, growth language mindset, and teacher autonomy support as the factors affecting students' WTC in online

learning as single studies. Investigating variables that influence learners' WTC in online learning has the potential to improve learners' WTC in online learning, which will likely increase the students' chance of using English in communication. Reviewing the theories and previous studies, the five variables, namely learner agency, learner beliefs, growth language mindset, teacher autonomy support, and WTC in online learning, are expectedly associated with one another. Students having a high level of learner agency, positive beliefs of English communication and behavior, and a growth language mindset as well as perceiving their teachers as more autonomy-supportive can be assumed to have a higher level of WTC in online learning. Thus, to prove this proposition, this study will test these hypotheses as follows:

H1: Teacher autonomy support correlates with learner agency.

H2: Teacher autonomy support correlates with growth language mindset.

H3: Teacher autonomy support correlates with learner beliefs.

H4: Growth language mindset has a relationship with learner agency.

H5: Growth language mindset has a relationship with learner beliefs.

H6: Learner agency is associated with students' WTC in online learning.

H7: Growth language mindset is associated with students' WTC in online learning.

H8: Learner beliefs are associated with students' WTC in online learning.

Method

The present study aims to undertake an exploratory analysis of learner agency, learner beliefs, growth language mindset, teacher autonomy support and WTC in online learning by examining eight previously proposed hypotheses. Figure 1 shows the conceptual model of the interplays among the variables.
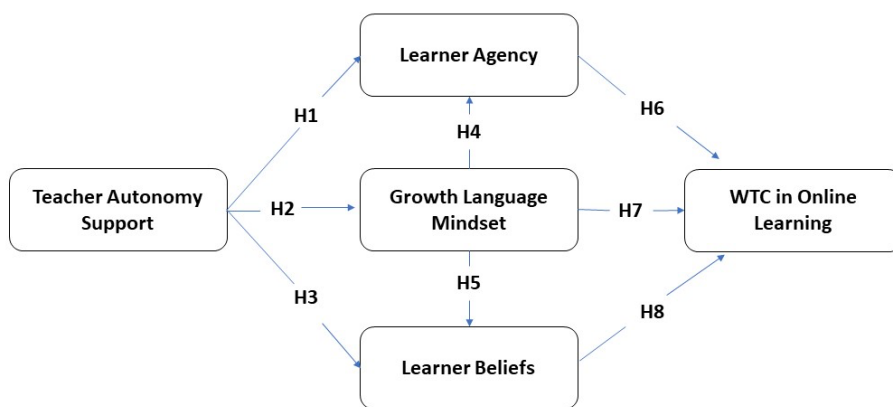
Figure 1. The Conceptual Model

Respondents

A quantitative method of Partial Least Square-Structural Equation Modeling (PLS-SEM) model analysis was employed in this study. To collect the data, this study employed purposive sampling from the fifth and seventh semester undergraduate students who have taken English classes and experienced online learning. Students enrolled in EFL programs at several

universities in the provinces of Bengkulu, West Java, Central Java, Yogyakarta, and East Java, as well as other provinces in Indonesia, comprised prospective respondents. Those provinces can be grouped into the regions of Sumatra, Java, and Papua. On the basis of the distributed online questionnaire, we received 367 responses. Table 1 shows the demographic information of the respondents.

Table 1. Demographic Profile (Number of respondents = 367)

Category	Classification	Percentage of respondents
Gender	Male	31
	Female	69
Semester	7	44
	5	56
Major of education	English	72
	Non-English	28
Region	Sumatra	25
	Java	63
	Papua	12

Research instrument

Online surveys based on Google Forms were employed to collect the data. Referring to the variables of learner agency, learner beliefs, growth language mindset, teacher autonomy support, and WTC in online learning, we adapted the questionnaire as the instrument from the previous studies that consist of 12 items by Code (2020) for the learner agency variable, 9 items by Horwitz (1987) for the learner beliefs variable, 10 items by Lou and Noels (2017) for the growth language mindset variable, 7 items by Simon and Salanga (2021) for the teacher autonomy support variable, and 11 items by Khatib and Nourzadeh (2015) for WTC in online learning. We utilized a 5-point Likert scale, indicating 1 = strongly disagree and 5 = strongly agree. Moreover, to tailor the instrument to the context and conditions of the participants, we undertook multiple steps to assure the reliability and validity of the instrument. First, we performed a back translation on the instrument by translating the language from English into Indonesian by a doctoral student specializing in translation studies. Second, we employed face validity by enlisting the assistance of three professionals in the domains of education, languages, and digital learning. Third, we included five prospective participants in the content validity analysis. Fourth, we moderated the instrument by administering a try-out test to 26 prospective EFL students as respondents from a university in Indonesia. The tryout data were subsequently examined using the SPSS 23 software. The result of analysis from the tryout data showed that some items have r value that are less than r table, which means that those items were not valid for the Indonesian context, so we removed those items (Yong & Pearce, 2013). Finally, we got 25 questionnaire items which were used to collect the data. The obtained Cronbach's alpha value was 0.918, and the obtained r value ranged from 0.42 to 0.70 with an r table of 0.31. With the addition of these data, the instrument has surpassed the requirements for a high level of validity and reliability (Brown, 2002).

Data collection

Student respondents were picked from their population by disseminating links to an online questionnaire copied to a Google form. Thus, the EFL lecturers of each university where the student respondents were enrolled assisted us in distributing the links to the questionnaire to the student respondents. The survey link was available for two weeks, and it took around ten minutes for the respondents to complete the survey. As the ethical procedure, the online questionnaire includes a consent form with information regarding the nature of the study, its objective, the method of data collection, the rights of participants, and the anonymity and confidentiality of the responses. Respondents were able to access the questionnaire only after providing their digital consent and then proceeding to the next stage of the forms.

Data analysis procedures

SmartPLS 3.2 was utilized to conduct PLS-SEM analysis. In the context of social science and L2 research, SEM is a very helpful approach for analyzing complex theoretical correlations between multiple variables (Hair & Alamer, 2022). In addition, PLS-SEM is one method of SEM that refers to a composite-based approach that employs the total variance (common, particular, and error variance) and expresses the construct as a linear combination of its indicators. It is a viable option for analyzing smaller sample sizes as well (Hair et al., 2021). In data analysis, we designed a reflecting model based on the variables' focal points. In exploring the reflective model, we did two types of analysis as proposed by Hair et al. (2019). The first was the measurement model, which was done to measure the reliability and validity of the proposed model. In executing the measurement model evaluation, the model was formulated (inner and outer). Then, the outer model was analyzed to determine the indicator loading value, composite reliability, average variance extracted, and heterotrait-monotrait ratio. The second was the structural model, which was used to evaluate potential relationships within the model or to assess the hypothetical relationships within the model. The structural model was conducted to determine the Variance Inflation Factor (VIF), path coefficients, coefficient determination, effect size, and predictive relevance.

Findings

This section presents the results of the study. The findings focus on the analyses of the interrelationships among learner agency, learner beliefs, growth language mindset, teacher autonomy support and students' WTC in online learning.

Measurement model

Internal consistency dependability is utilized to assess the statistical consistency between indicators. This phase involves obtaining the CR number. According to Hair et al. (2014), the CR gain is between 0.70 to 0.95. The data in Table 2 shows the acquisition of CR numbers falls between 0.877 and 0.934. Therefore, all constructs are internally consistent and reliable.

To verify the validity of the constructs, convergent validity analysis is utilized. This stage is where the AVE number is obtained. The suggested AVE threshold is greater than 0.50 (Hair et al., 2014). The AVE found in Table 2 ranges from 0.592 to 0.721, which is over the acceptable level. Thus, the constructs' convergent validity has been proven.

Table 2. Indicator Loading, Composite Reliability, and Average Variance Extracted Measurement

	Items	Loading	CR	AVE
	LA			
1.	I consider how best to carry out a decision regarding learning strategies.	0.836	0.901	0.606
2.	I try to be clear about my objectives before choosing a learning strategy.	0.841		
3.	When making decisions I like to collect a lot of information.	0.817		
4.	I know exactly how to decrease my nervousness.	0.734		
5.	I always concentrate on the course subject during class.	0.725		
6.	I organize my coursework.	0.797		
	LB			
7.	I believe that eventually, I will learn to speak English very well.	0.836	0.903	0.651
8.	The most important part of learning English is learning to translate English into Indonesian.	0.727		
9.	I need to understand the English culture in order to speak the English language well.	0.779		
10.	It is very important to speak English with very good and correct pronunciation.	0.854		
11.	The most important part of learning a foreign language is learning grammar.	0.831		
	GLM			
12.	No matter how much language intelligence I have, I can significantly change my language intelligence level.	0.732	0.883	0.721
13.	In learning a foreign language, if I work hard at it, I will always get better.	0.937		
14.	Everyone could do well in foreign language if they try hard, whether they are young or old.	0.933		
	TAS			
15.	I feel that my lecturer provides me with choices and options.	0.769	0.934	0.702
16.	I feel that my lecturer understood me.	0.821		
17.	I feel that my lecturer conveys confidence in my ability to do well in my course.	0.846		
18.	I feel that my lecturer listens to how I would like to do things.	0.866		
19.	I feel that my lecturer tries to understand how I see things before suggesting a new way to do things.	0.869		
20.	I feel that my lecturer encouraged me to ask questions.	0.853		
	WTCOL			
21.	In online learning, I am willing to speak even if I know my classmates are better than me at speaking English.	0.73	0.879	0.592
22.	In online learning, I am willing to give a presentation in front of my classmates.	0.773		
23.	In online learning, I am willing to discuss cultural differences between English and Indonesian people in a group.	0.793		
24.	In online learning, I am willing to speak more when a discussion is related to my personal experiences.	0.746		
25.	In online learning, I am willing to raise my hand to ask or answer questions.	0.802		

LA = Learner Agency, LB = Learner Beliefs, GLM = Growth Language Mindset, TAS = Teacher Autonomy Support, WTCOL = Willingness to Communicate in Online Learning

Table 3. Heterotrait-Monotrait Ratio (HTMT)

	LA	LB	GLM	TAS	WTCOL
LA					
LB	0.823				
GLM	0.836	0.835			
TAS	0.863	0.854	0.848		
WTCOL	0.852	0.793	0.898	0.834	

LA = Learner Agency, LB = Learner Beliefs, GLM = Growth Language Mindset, TAS = Teacher Autonomy Support, WTCOL = Willingness to Communicate in Online Learnings

Discriminant Validity. One of the potential issues that can come from a model is an overlap between constructs, resulting in a bias in the outer model. By establishing a Heterotrait-Monotrait Ratio (HTMT) figure with a threshold less than 0.90, discriminant validity testing is utilized to confirm that each construct in the model is different. The HTMT score in Table 3 falls between 0.793 and 0.898. Referring to the acquisition rate, the model's construct has attained the required level of discriminant validity.

Structural model assessment

Multicollinearity. The initial step in evaluating a structural model is to conduct a multicollinearity test to get the Variance Inflation Factor (VIF) value. This step ensures that there are no multicollinearity issues affecting the path coefficient result's bias (Ghasemy et al., 2020). According to (Hair Jr et al., 2017), the threshold should not exceed 5.00. The VIF values listed in Table 4 range from 1.000 to 3.971. Hence, there is no multicollinearity problem among the five constructions.

Table 4. Variance Inflation Factor

	LA	LB	GLM	TAS	WTCOL
LA					2.831
LB					3.178
GLM	2.255	2.255			3.971
TAS	2.255	2.255	1.000		
WTCOL					

Path Analysis
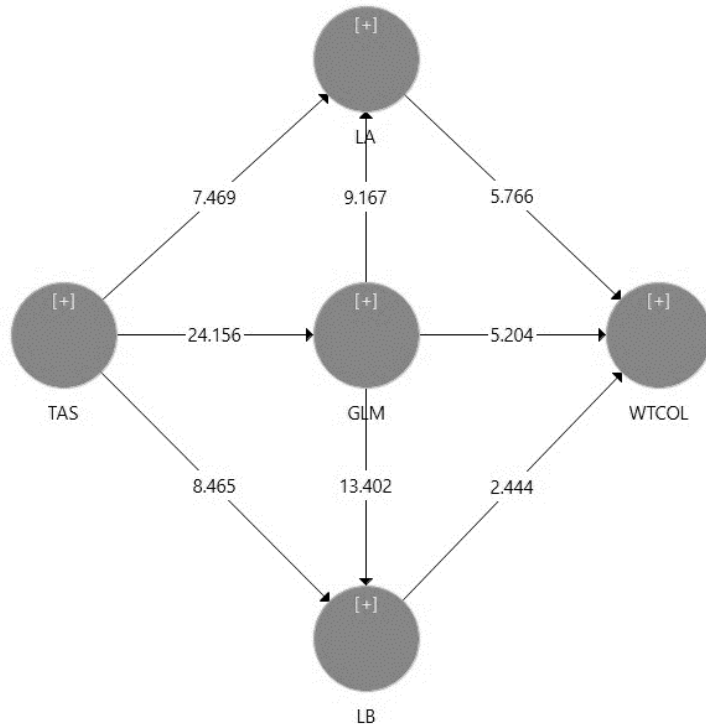
Figure 2. Path Coefficient.

The path analysis was undertaken by bootstrapping the suggested model. We applied the level of significance at 5%. Figure 2 (numbers on arrows) demonstrates that each construct has a value of +1, which is positive. The acquisition of these values implies that each construct has a strong positive relationship value that corresponds to the threshold (-1 = strong negative and +1 = strong positive) suggested by Hair et al. (2014). Afterward, the obtained value of T (see statistics for T in Table 5) is greater than 1.96. The desired T statistic value with a significance level of 0.05, is more than 1.96. Hence, the eight formulated hypotheses were supported.

Table 5. Path Analysis Result.

Hypotheses	β	Mean	SD	T Statistics	p Values	Sig
TAS -> GLM	0.746	0.745	0.031	24.031	0.000	Supported
GLM -> LB	0.542	0.543	0.042	13.038	0.000	Supported
GLM -> LA	0.483	0.482	0.050	9.725	0.000	Supported
TAS -> LB	0.368	0.368	0.044	8.340	0.000	Supported
TAS -> LA	0.413	0.412	0.053	7.815	0.000	Supported
GLM -> WTCOL	0.333	0.331	0.059	5.625	0.000	Supported
LA -> WTCOL	0.346	0.350	0.062	5.616	0.000	Supported
LB -> WTCOL	0.169	0.167	0.072	2.343	0.020	Supported

Note: p < 0.05 indicates that the hypothesis is supported

Table 5 shows that the relationships between all the variables under study as hypothesized before are presented based on the order of the T statistics from the strongest positive significance to the weakest one. The relationship between TAS and GLM is found to be the strongest, whereas that between LB and WTCOL is the lowest. This result suggested that in comparison to students' internal factors such as learner beliefs, an external intervention such as teacher autonomy support has a stronger influence on students' WTC in online learning.

Coefficient of determination (R^2) and Effect size (f^2). To determine the predictive accuracy of the developed model, we analyzed the coefficient of determination (R^2).

Table 6. Coefficient determination (R^2)

Construct	R Square	R Square Adjusted	Consideration
LA	0.702	0.7	Strong
LB	0.727	0.725	Strong
GLM	0.557	0.555	Strong
WTCOL	0.618	0.615	Strong

Hair and Alamer (2022) categorize the R2 criterion range as follows: weak (0-0.10), modest (0.11-0.30), moderate (0.30-0.50), and strong (> 0.50). Hence, the data on Table 6 demonstrates that the four constructs (LA = 0.7, LB = 0.725, GLM = 0.555, and WTCOL = 0.615 have R^2 values above 0.5, which indicates a strong relationship between the predictors and dependent variables.

Table 7. Effect size (f^2)

Path	f^2	Effect size
TAS -> LA	0.254	Medium
TAS -> GLM	1.255	Large
TAS -> LB	0.219	Medium
GLM -> LA	0.346	Medium
GLM -> LB	0.477	Large
LA -> WTCOL	0.111	Small
GLM -> WTCOL	0.073	Small
LB -> WTCOL	0.024	Small

In the next phase, we analyzed the effect size. This analysis is used to examine the influence of the relationship between constructs (exogenous to endogenous) if specific exogenous constructions are removed from the model and the R2 value is affected (Hair & Alamer, 2022). The acquisition of f2 was categorized by Hair et al. (2014) into three categories: 0.02 (small), 0.15 (medium), and large (0.35). According to Table 7, TAS has the biggest effect size on LM (1.255), followed by LM to LB (0.477). The medium effect size relationships were discovered between TAS and LA (0.254), TAS and LB (0.219), and GLM and LA (0.346). Meanwhile,

small effect size relationships were discovered between LA and WTCOL (0.111), GLM and WTCOL (0.075), and LB and WTCOL (0.024).

Predictive relevance (Q^2). We acquired a Q^2 value by blindfolding the PLS-SEM analysis. This analysis was performed to confirm that the model is well-constructed and predictively relevant (> 0 is good). The scoring structure for Q^2 is 0 (small), 0.25 (medium), and 0.50. (large). According to Table 8, the predictive relevance of all constructs in the model is in the medium range (> 0.355). The Q^2 values are all medium, indicating that the models have good predictive power. The predictive relevance analysis shows that the models are statistically significant in predicting the dependent variables.

Table 8. Predictive relevance (Q^2)

	SSO	SSE	Q² (=1-SSE/SSO)	Predictive Relevance
LA	2064	1207.813	0.415	Medium
LB	1720	933.897	0.457	Medium
GLM	1032	625.985	0.393	Medium
TAS	2064	2064		
WTCOL	1720	1109.345	0.355	Medium

SSE = Sum Square Error, SSO = Sum Square Observation

Sum Square Error (SSE) and Sum Square Observation (SSO) are used to calculate predictive relevance (Q^2). SSO equals to the number of observations multiplied by indicators. The SSO for standardized data equals the number of observations. Every observation represents a standard deviation-scaled deviation from the mean. Consequently, it does not imply that the SSO for each observation is precisely 1. It is contingent upon the initial value and its deviation from the mean. Therefore, the SSO represents a prediction of the mean value. In contrast, the SSE is the prediction error when a model prediction is utilized.

Discussion

The purpose of this study is to explore the interplays of factors affecting students' WTC in online learning. The exploratory analysis resulted in significant interrelationships amongst research variables: learner agency, learner beliefs, growth language mindset, teacher autonomy support, and WTC in online learning. Accordingly, all eight hypotheses of this study were confirmed.

The first, second, and third results showed that there were positive and significant connections between teacher autonomy support and learner agency ($\beta = 0.41$; $p < 0.05$; $t = 7.815$), teacher autonomy support and growth language mindset ($\beta = 0.74$; $p < 0.05$; $t = 24.031$), teacher autonomy support and learner beliefs ($\beta = 0.36$; $p < 0.05$; $t = 8.340$). These positive connections could be made to indicate that students who receive more autonomy support from the teacher are more likely to be willing and able to take action regarding their WTC in online learning. It is likely that when teachers provide autonomy support to their students, learner agency, growth mindset, and beliefs will increase. The findings show that in the Indonesian context, EFL students' WTC especially in online learning still highly depend on the lecturers. The findings have been emphasized by Zarrinabadi et al. (2021) whose study showed that when students

receive more autonomy support from the teacher, they feel more competent and motivated to engage in English communication. Moreover, supporting this point, a current study by Solhi (2023) proved that L2 teacher support significantly impacts EFL learners speaking motivation in online classes. This information is useful for lecturers and policymakers seeking to improve student learning and classroom motivation. In this sense, EFL lecturers would encourage students by giving more choices of online classroom activities related to learning topics. The variety of online learning activities besides formal lecturing from the lecturer could motivate students to be more engaged in classroom interaction which is found as a significant effect on learner agency (Xiao, 2014).

The findings also confirmed the previous study by Lou and Noels (2020) that teachers play a significant role in developing students' growth mindset. Students will acquire a growth language mindset as a result of teachers' support for online learning by helping students improve their language and communication language skills. Teachers can encourage students to actively communicate by offering them equal opportunities to talk in relation to the studied topics, encouraging students to ask questions, and praising the student's language proficiency, among other things, while they are studying online. As highlighted by Lee and Drajati (2019), who found the impact of digital learning activities on students' WTC in a second language, this finding also emphasizes the significance of teacher-designed online learning activities. Moreover, this study highlights the significance of teacher autonomy support in terms of facilitating the proper online classroom activities and interactions and respecting students' feelings to foster learner beliefs in English communication. Such positive beliefs foster a sense of increased English proficiency and motivation in online classes (Zarrinabadi et al., 2021). The interesting finding from this study was that teachers' personalities, such as those who are humorous, empathetic, and motivating, influence students' attitudes toward English communication and classroom behaviors. In contrast, students may develop negative beliefs toward English communication if their teachers are very tough and strict and apply excessive pressure. Therefore, students require more supporting teachers for their language development to be successful.

The fourth and the fifth results of this study indicated that growth language mindset positively correlated with learner agency ($\beta = 0.48$; $p < 0.05$; $t = 9.725$), and growth language mindset had a relationship with learner beliefs ($\beta = 0.54$; $p < 0.05$; $t = 13.038$). It could be interpreted that having a growth language mindset is likely to result in increased learner agency and learner beliefs. The higher the level of the students' growth language mindset is, the higher level of agency the students have. In other words, when the students have growth language mindset (vs. fixed language mindset), they would have a higher ability to act in terms of initiating communication using English in online learning. This finding supports the study by Larsen-Freeman et al. (2021) whose study emphasized that learners with a growth mindset are agentive. They feel that they have the ability to learn and progress and are in control of their own learning. A study by Rhew et al. (2018) also suggested that growth mindset has a relationship with self-efficacy whereby self-efficacy is a variable that builds learner agency. Furthermore, learner agency led students to have a higher level of WTC in online learning. Afterward, as the fifth hypothesis was confirmed, growth language mindset predicted learner beliefs about English communication and behavior. When the students had a growth language mindset, they would perceive a positive belief in English communication. In detail, growth language mindset enables the students to build a positive belief that as long as they put effortsinto learning English communication, their communicative competence will get better.

Another point to note is that it does not matter how old we are when we start learning a foreign language, if we have the belief and willingness to learn and practice our WTC, our language skills will improve. As a result, this supported them to be more willing to initiate communication (Zarrinabadi et al., 2021).

The sixth, seventh, and eighth results of this study indicated that learner agency correlated with students' WTC in online learning (($\beta = 0.34$; $p < 0.05$; $t = 5.616$); growth language mindset is associated with students' WTC in online learning ($\beta = 0.33$; $p < 0.05$; $t = 5.625$); and learner beliefs had a relationship with students' WTC in online learning ($\beta = 0.16$; $p < 0.05$; $t = 2.343$). WTC is a crucial part of online learning, and higher levels of WTC are connected with better academic performance and greater learning outcomes (Mulyono & Saskia, 2021). The findings highlighted that in the online learning environment, learner agency triggered students' WTC. The features of learner agency allowed the students to increase their awareness of their responsibilities in learning. It also activated students' commitment to engage in communication, establish the interaction in the target language, and allow them to communicate in online learning. The concept of learning agency accompanied by learning presence emphasized that students had not only the capacity to control and direct themselves but also the capacity to reflect and improve their personal decision, actions and goals in digital environments (Xiao, 2014). Thus, in the present study, students who are agentive would be able to manage cognitive, affective and behavioral processes themselves to deal with online learning communication (Ardi & Rianita, 2022; Code, 2020). They are able to consider the appropriate way of learning, choose their own strategy to initiate communication and find a way to deal with their language anxiety. Furthermore, students with an agency would be able to take advantage of the available resources in web-based learning environment and deal with perceived anxiety in delivering communication in online platforms (Assapari & Hidayati, 2023). Reinders and Wattana (2014) have also emphasized that students can interact and communicate in more comfortable situations with the help of digital tools. It is assumed that a comforting environment would minimize their fear and thus promote their WTC.

The other factors that were confirmed as significant predictors for students' WTC in online learning were growth language mindset and learner beliefs. The positive association between growth language mindset and WTC shows that students who have a growth mindset on language learning and who believe their language skills can be developed through effort and practice are more willing to communicate in online learning environments. This finding supports Zarrinabadi et al. (2021) whose study showed that when students possess a growth mindset and positive beliefs in English communication, they can figure out what their goals in communication are, how they determine their academic performance, and how they can make the best out of digital tools to facilitate their WTC in online learning. Despite the challenges found in online learning, such as lack of interaction or engagement, students with a growth language mindset and positive beliefs about English communication still have the willingness to take part in communication or to engage in learning activities due to their awareness that their language proficiency would develop as long as they put efforts in their learning, and they believe that at the end of the day, as the result of their consistency in learning, their English skills would get better. An interesting point of this finding was that the student's level of WTC in online learning or digital environment could be higher than that in F2F learning. This issue has been emphasized by Lee et al. (2022) that online learning could give satisfaction to students as long as there is adequate interaction. This finding also supports Mulyono and Saskia (2020) whose study highlighted that students have a higher level of WTC when participating in digital

communication than in F2F settings due to the online environment, which is often perceived as 'safer' and less face-threatening.

Conclusion

Using PLS-SEM modeling, this exploratory analysis shows how learner agency, learner beliefs, a growth language mindset, teacher autonomy support, and students' WTC interact in online learning. The study reveals positive and significant relationships between teacher autonomy support and learner agency, between teacher autonomy support and growth language mindset, between teacher autonomy support and learner beliefs, between growth language mindset and learner agency, between growth language mindset and learner belief, between learner agency and students' WTC in online learning, between growth language mindset and students' WTC in online learning and between learner beliefs and students' WTC in online learning. It can be concluded that the individual factors such as growth language mindset for students' WTC in online learning promote learner agency and learner beliefs. Together with growth language mindset, other variables namely learner agency and learner beliefs significantly affect students' WTC in online learning. The findings also gave some pieces of evidence that there are some factors that can be examined to determine language learners' beliefs about English communication and behavior that could trigger the students' willingness to participate in online communication. In addition, the contextual factor namely teacher autonomy support during English online learning also strongly determined the level of students' WTC. The findings related to the factors affecting students' WTC in online learning are critical for EFL teachers to make use of the individual factors and take them into account. The EFL teachers are expected to maximize their support to enhance students' WTC as well as their communicative competence and assist the students to overcome their language anxiety to foster communication confidence.

Further research is suggested to examine the structural model of WTC in online learning both individual and contextual factors such as enjoyment in online learning, online classroom environment, critical thinking skills, or other influential variables. Such research with more predicted variables will assist EFL educators by providing more verifiable and scientific information about how to improve their students' WTC in online learning as well as enhancing their communicative competence. In addition, it is also suggested that further empirical research be carried out to explore possible strategies to promote students' WTC in online classrooms. It is essential since the finding of the present study shows a predisposition that the level of students' WTC in online learning is higher than that in F2F learning. Hence, it is also suggested for schools and universities to keep hybrid learning in the EFL learning context as well as support the advancement of technology integration today.

About the Authors

Suci Nugrah Amalia is a Ph.D student at Department of English, Faculty of Letters, Universitas Negeri Malang, Indonesia. She received her master's degree from Universitas Sebelas Maret, Indonesia. She got her scholarships from Indonesia Endowment Fund for Education (LPDP) for her master's and doctoral study. Her research interest is in the area of ELT, willingness to communicate, and teacher professional development. **ORCID ID: 0000-0002-5189-8813**

Radina Anggun Nurisma is a Ph.D. student at Department of English, Faculty of Letters, Universitas Negeri Malang, Indonesia and a faculty member at Politeknik Elektronika Negeri

Surabaya, Indonesia. Her research interests are primarily on English Language Teaching (ELT), English for Specific Purposes (ESP) and ICT in ELT. **ORCID ID: 0000-0003-3423-9354**

Utami Widiati is a professor in English language teaching at the English Department, Faculty of Letters, Universitas Negeri Malang, Indonesia. She obtained her professorship in the area of literacy learning in 2009. Her research interests include foreign language literacy, SLA, curriculum and material development, and teacher professional development. She is a pre-and in-service teacher trainer and has written secondary school English textbooks prescribed by the Indonesian government. She also serves as the chief editor for TEFLIN Journal. **ORCID ID: 0000-0002-8603-4556**

Lastika Ary Prihandoko is a faculty member at Management Trading Department, Vocational School, Universitas Sebelas Maret, Indonesia. His primary research interest is academic writing. **ORCID ID: 0000-0002-0563-9722**

Acknowledgements

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